Exercise 1

Let h be a function defined by $h(x) = 5\tan(x)$. Which of the following definitions of f and g satisfy $\left(\frac{f}{g}\right)(x) = h(x)$?

Multiple Choice:

(a)
$$f(x) = 5\sin(x)$$
 and $g(x) = 5\cos(x)$

(b)
$$f(x) = \sin(x)$$
 and $g(x) = \cos(x)$

(c)
$$f(x) = \sin(x)$$
 and $g(x) = \frac{\cos(x)}{5}$

(d)
$$f(x) = 5\sin(x)$$
 and $g(x) = \frac{1}{5\cos(x)}$

Let h be a function defined by $h(x) = 2\tan(x)$. Which of the following definitions of f and g satisfy $(f \cdot g)(x) = h(x)$?

Multiple Choice:

(a)
$$f(x) = \tan(x)$$
 and $g(x) = 2\cos(x)$

(b)
$$f(x) = 2\sin(x)$$
 and $g(x) = \frac{1}{\cos(x)}$

(c)
$$f(x) = \cos(x)$$
 and $g(x) = 2\sin(x)$

(d)
$$f(x) = \frac{2}{\sin(x)}$$
 and $g(x) = \cos(x)$

Let h be a function defined by $h(x) = \sin(x)\tan(x)$. Which of the following definitions of f and g satisfy $(f \cdot g)(x) = h(x)$?

Multiple Choice:

(a)
$$f(x) = (\sin(x))^2$$
 and $g(x) = \cos(x)$

(b)
$$f(x) = \sin(x)$$
 and $g(x) = \frac{1}{\cos(x)}$

(c)
$$f(x) = (\sin(x))^2$$
 and $g(x) = \frac{1}{\cos(x)}$

(d)
$$f(x) = \cos(x)$$
 and $g(x) = \left(\frac{1}{\sin(x)}\right)^2$